

DOCKETED

Docket Number:	17-IEPR-01
Project Title:	General/Scope
TN #:	221758
Document Title:	SoCalGas Comments on the Draft 2017 IEPR
Description:	N/A
Filer:	System
Organization:	Southern California Gas Company
Submitter Role:	Public
Submission Date:	11/13/2017 4:50:37 PM
Docketed Date:	11/13/2017

Comment Received From: Southern California Gas Company

Submitted On: 11/13/2017

Docket Number: 17-IEPR-01

SoCalGas Comments on the Draft 2017 IEPR

Additional submitted attachment is included below.



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November 13, 2017

California Energy Commission
Dockets Office, MS-4
1516 Ninth Street
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Subject: Comments on the Draft 2017 Integrated Energy Policy Report— 17-IEPR-01 – General/Scope

Southern California Gas Company (SoCalGas) appreciates this opportunity to comment on the Draft 2017 Integrated Energy Policy Report (Draft 2017 IEPR). We provide feedback on the following chapters of the Draft 2017 IEPR:

- I. Chapter 2: Implementing SB 350
- II. Chapter 4: Accelerating the Use of DER on the California Grid
- III. Chapter 8: Natural Gas Trends and Outlook
- IV. Chapter 9: Renewable Gas
- V. Chapter 10: Climate Adaptation and Resiliency
- VI. Chapter 11: Update on Energy Reliability Issues in Southern California

I. Chapter 2: Implementing SB 350

SoCalGas supports the State’s ambitious efforts to increase energy efficiency (EE) and reduce greenhouse gas (GHG) emissions as part of Senate Bill (SB) 350. As we have stated in previous SB 350 comment letters,¹ we encourage the CEC to consider impacts to feasibility and energy affordability when evaluating proposals and measures such as fuel substitution.

Cost-effectiveness is essential to ratepayer protection

The Draft 2017 IEPR states that several stakeholders have encouraged the California Energy Commission (Commission or CEC) and California Public Utilities Commission (CPUC) to address policy barriers that currently limit utility incentive programs and Title 24 from encouraging fuel substitution.² SoCalGas would like to emphasize that these policies, such as the

¹ SoCalGas Comments on SB 350 Energy Efficiency Savings Doubling Targets Draft Commission Paper, September 21, 2017, and SoCalGas Comments on SB 350 Energy Efficiency Savings Doubling Targets Staff Papers, August 3, 2017.

² Draft 2017 IEPR, p.56.

CPUC’s three-prong test, are in place to verify cost-effectiveness and to ultimately protect ratepayers. In most cases, projects do not pass the three-prong test because they are not cost-effective, and are therefore not eligible for ratepayer-funded programs.

The Draft 2017 IEPR also provides electric heat pumps as an example of a fuel substitution technology for reaching SB 350 goals.³ However, there are currently several economic and technical barriers to implementing electric heat pumps. The “Palo Alto Electrification Final Report,” referenced in B-159 of the SB 350 Final Commission Report, concludes that heat pump water heating and combined heat pump space and water heating packages are not cost effective in existing buildings, primarily due to the costly electrical upgrades required.⁴ As the majority of housing in California was built before 1980, most residential electrification projects would not be cost-effective. According to the Energy Planning Analysis Tool, SoCalGas found that full electrification of the state would cost Californians approximately \$345 million annually in higher energy costs, and would cost over \$5 billion to retrofit California’s more than 12 million households with high efficiency electric water heating, space heating, and cooking end uses.⁵ Households in electrified single-family homes, using the 2,100 square foot, single-family prototype building, will pay \$180 to \$852 higher in utility bills than mixed-fuel homes annually, according to an Energy and Environmental Economics electrification analysis⁶ (also cited in the Palo Alto Report). SoCalGas provided further details on the cost, efficiency, and feasibility concerns to electrifying space and water heating in the previously submitted letter on the Draft Commission Report.⁷

As SB 350 also calls for improving the economic conditions in disadvantaged communities,⁸ the CEC must consider electrification impacts to energy and housing affordability for the 43% of California households that are lower income,⁹ including over one-third of SoCalGas customers—or 1.5 million households—that receive bill assistance each month.

SoCalGas supports the creation of the Fuel Substitution Working Group

The Draft 2017 IEPR recommends that the CEC work with utilities to develop guidelines for fuel substitution.¹⁰ The Draft Commission Report also recommended convening a working group to review SB 1383 and Air Resources Board’s (ARB’s) Short-Lived Climate Pollutants (SLCP) Reduction Strategy as part of a fuel substitution working group.¹¹ SoCalGas agrees that this is an important step in ensuring that electrification of natural gas end-uses does not preclude adoption of other lower carbon energy sources and decelerate achievement of the State’s climate goals.

³ Draft 2017 IEPR, p. 55.

⁴ City of Palo Alto. TRC Energy Services. “Palo Alto Electrification Final Report.” November 16, 2016. <http://www.cityofpaloalto.org/civicax/filebank/documents/55069>. Pages 15-16.

⁵ Energy Planning Analysis Tool is located at <http://epat.gastechnology.org/>

⁶ Electrification Analysis, report completed by Energy & Environmental Economics in July 2016. http://docketpublic.energy.ca.gov/PublicDocuments/16-BSTD-06/TN212680_20160808T161828_Electrification_Analysis.pdf. Page 33.

⁷ SoCalGas Comments on SB 350 Energy Efficiency Savings Doubling Targets Draft Commission Paper, September 21, 2017.

⁸ <http://www.cpuc.ca.gov/General.aspx?id=6442453417>

⁹ <http://www.hcd.ca.gov/policy-research/plans-reports/docs/California's-Housing-Future-Main-Document-Draft.pdf>

¹⁰ 2017 Draft IEPR, p. 83.

¹¹ CEC SB 350 Draft Commission Report, p. 53.

SoCalGas would like to be included in this working group and can provide input on utilizing renewable gas in the residential sector.

II. Chapter 4: Accelerating the Use of Distributed Energy Resources on the California Grid

Power-to-Gas should be considered for further research and investment

As the use of distributed energy resources (DERs) in California continues to grow, state agencies will need to adopt policies and forward-looking research investment plans to enable these technologies to integrate with existing energy infrastructure.

As was covered in our comments on earlier workshops, SoCalGas believes the CEC should strongly consider power-to-gas (P2G) technology for inclusion in DER planning efforts. If we are to reach ever-higher penetration rates of renewable generation sources on the grid, energy storage solutions, like P2G, will be crucial in absorbing the large amounts of excess energy that would otherwise be curtailed and discharging it when demand is highest. We appreciate the CEC’s inclusion of P2G in Chapter 3 of the IEPR, but feel it is also relevant to the DER discussion.

P2G is still in early commercialization and will require investment in the research necessary to bring this crucial technology to market. SoCalGas is actively supporting P2G research and demonstration projects, including the first-ever P2G microgrid project in North America at the University of California at Irvine (UCI). The UCI system demonstrates several of the value propositions that P2G technology can provide for microgrids, including a dispatchable load, the capture of otherwise-curtailed intermittent renewable power, and using the natural gas system as a storage resource.

Further research is needed to understand the impact hydrogen can have on the natural gas pipeline system, but initial studies at UCI have shown promising results. The CEC should commit to funding such research opportunities at the many California institutions—such as UCI—that are willing to undertake them.

Before P2G can become fully realized as a grid solution, however, several policy hurdles need to be overcome. Crucially, the natural gas system (including transmission, distribution, and storage systems) needs to be considered as an energy storage resource when renewable hydrogen is included. As noted in Chapter 3 of the Draft 2017 IEPR, “hydrogen can be stored more cheaply than electricity in a battery” and the existing natural gas pipeline system is a critical and cost-effective solution for doing so. The CEC should support policies that allow the natural gas system to be counted as an energy storage resource where P2G is concerned.

III. Chapter 8: Natural Gas Trends and Outlook

SoCalGas is supportive of comments made by our sister company, San Diego Gas & Electric Company (SDG&E), which highlight the need to maintain and modernize the natural gas system in a manner that significantly enhances the overall safety, reliability, resiliency, and flexibility of the Southern California energy grid. The final 2017 IEPR should recognize that investments in natural gas infrastructure are consistent with the state’s safety, reliability, and climate goals.

SDG&E and SoCalGas’ co-sponsored Pipeline Safety & Reliability Project (PSRP), for example, would enhance public safety, improve reliability in a gas-constrained region, facilitate renewable gas usage in the greater San Diego area, and modernize the natural gas system through state-of-the-art technology upgrades.

In our joint SoCalGas-SDG&E prior comments¹² on the Draft 2016 IEPR Update, we highlighted the need for the PSRP to meet a “top priority”¹³ of the state for improving pipeline safety and reliability and safety risks from the CPUC’s denial of the North-South Project, despite acknowledging the need for “enhanced system reliability in the Southern System.”¹⁴ The final 2017 IEPR should recognize that these risks have only grown more urgent in the past year. Our joint statement from last year’s comments remains equally germane today: “SoCalGas and SDG&E believe that investments in natural gas infrastructure that can accomplish multiple objectives simultaneously – e.g., safety, reliability and energy grid flexibility – should be encouraged and prioritized in order to meet California’s dynamic and evolving energy needs and climate policies consistent with the Draft 2016 IEPR Update.”

Further, SoCalGas supports the Draft 2017 IEPR’s emphasis on natural gas infrastructure safety. As the report points out, replacing outdated infrastructure will enhance the safety of our pipeline system.¹⁵ SoCalGas has an obligation to provide safe and reliable natural gas service to all natural gas customers in its service area. SoCalGas also has an obligation to comply with the CPUC-approved Pipeline Safety Enhancement Plan (PSEP) via projects like PSRP, which would replace one of two lines that currently transport natural gas to San Diego County. In addition to installing cathodic protection to protect the pipeline from corrosion, as described,¹⁶ the PSRP also will install internal inspection launching and receiving equipment and incorporate new, significant safety features (e.g., modern safety features, such as warning mesh to alert excavators, intrusion detection monitoring, and 24-hour real-time leak detection system). The final 2017 IEPR should recommend strategies to upgrade natural gas infrastructure that improves safety, enhances reliability, and facilitates the reduction of GHG emissions consistent with state policy.¹⁷

IV. Chapter 9: Renewable Gas

The CEC must make stronger recommendations for the development and use of renewable gas

SB 1383 recognizes that renewable gas will play an important role in meeting California’s SLCP and GHG reduction goals. The bill specifically directs the CEC to develop policy recommendations for the development and use of renewable gas and develop cost-effective strategies, including infrastructure development and procurement policies, that will encourage

¹² SoCalGas–SDG&E comments on Draft 2016 IEPR Update. Available at http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-01/TN214407_20161107T155727_Tim_Carmichael_Comments_CEC_Draft_2016_IEPR_Update_SoCalGasSDGE.pdf

¹³ 2015 IEPR at 146. “It is the policy of the state that the [CPUC] and each gas corporation place safety of the public and gas corporation employees as the top priority.”

¹⁴ CPUC Decision 16-07-015 at 24-25.

¹⁵ Draft 2017 IEPR, p. 240.

¹⁶ Draft 2017 IEPR, p. 241.

¹⁷ Draft 2017 IEPR, p. 251.

the production of renewable gas in the 2017 IEPR.¹⁸ SoCalGas believes the Draft 2017 IEPR falls short of the SB 1383 mandate. The CEC does not make sufficient recommendations on increasing the development and use of renewable gas, particularly with respect to infrastructure development and procurement policies. Without specific policies that prioritize and support in-state development of pipeline-injected renewable gas, California will not meet the goal of 40% reduction of methane below 2013 levels by 2030.

As over 80% of the state's methane emissions come from the agricultural and waste industries, putting organic waste streams to beneficial use in the form of renewable gas is critical to meeting climate change and air quality goals. In fact, the California Air Resources Board's (ARB) 2017 Climate Change Scoping Plan Update relies heavily on the SLCP Reduction Plan, which focuses on utilizing renewable gas from organic sources, to achieve 32% of GHG reductions needed to reach the 2030 goals.¹⁹

A. Pipeline injection is the best mode for renewable gas

SoCalGas appreciates the CEC's recognition of renewable gas use in the medium- and heavy-duty vehicle sectors as an important strategy for improving air quality, and its recommendation to encourage renewable gas for use in state fleets.²⁰ Renewable gas can provide an immediate opportunity to significantly reduce GHG and NOx emissions by replacing diesel transportation fuel. However, as stated in the Draft 2017 IEPR, transportation is a near-term strategy to utilize the State's SLCP emission sources. As the demand for renewable fuels in the transportation sector develops over time, more renewable gas will be developed and become available to decarbonize natural gas end-uses in residential and commercial uses, as well as generate electricity.

Pipeline access allows renewable gas to be flexibly delivered to decarbonize natural gas end-uses in both the residential and commercial sectors. As California implements additional programs to decarbonize the residential energy market, directing renewable gas to residential appliances can provide similar benefits at a comparable or lower cost than all-electric homes utilizing solar photovoltaic (PV) systems.²¹ Using renewable gas in the home removes the need to electrify end uses, which would be costly to ratepayers and create feasibility challenges. As 90% of homes in Southern California use natural gas, decarbonizing existing pipeline infrastructure with renewable gas is a more feasible GHG-reduction strategy than electrification and promotes customer choice, energy diversity, and resilience.

While the Draft 2017 IEPR includes a section discussing pipeline injection, the CEC should include pipeline injection for direct end use as an explicit recommendation for the long-term use

¹⁸ http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1383

¹⁹ 2017 Scoping Plan Update Public Workshop, October 12, 2017. Slide 16.

<https://www.arb.ca.gov/cc/scopingplan/meetings/101217/sp-october-workshop-slides.pdf>

²⁰ 2017 Draft IEPR, p. 293

²¹ Renewable gas in a mixed-fuel home would provide lower upfront costs (5-10%), smaller solar PV sizes (-.4-0.7 kW) and modest homeowner annual cost savings. Navigant Consulting, Inc. 2017. "Strategy and Impact Evaluation of Zero-Net-Energy Regulations on Gas-Fired Appliances." Report prepared for Southern California Gas Company. March 7, 2017.

of renewable gas. Using the pipeline system will provide this resource access to the broadest market, enabling greater flexibility and maintaining long-term value.

B. Enabling long-term utility infrastructure and procurement investment

To accommodate the development of renewable gas resources in California, important infrastructure investments are needed. The CEC should include utility ratebased investment in this infrastructure as a primary policy recommendation, as it can offset portions of these costs to stimulate the production of California renewable gas and meet the SLCP reduction goals of SB 1383.

Much of the requisite infrastructure is related to pipeline transportation, gas processing and quality management, and gas measurement – all infrastructure that utilities are experienced at operating. Policies to enable utility rate-based investment in these facilities will hasten in-state renewable gas development and interconnection with the pipeline network.

Additionally, SoCalGas believes the market stability through a utility procurement requirement will be necessary to increase production, drive down costs over time, develop new gasification and other renewable gas technologies, and provide the volumes necessary to move renewable gas to the core market. This will drive greater GHG reductions without the massive disruption and investment that would be required for individual customers to replace existing equipment and appliances. SoCalGas also recommends that the CEC support facilitating long-term supply contracts, which would enable capital financing of long-term production projects and provide further market certainty for the renewable gas market.

These concepts are not unprecedented. Under California’s RPS, electric utilities have upgraded transmission infrastructure to support increasing levels of electricity from wind and solar, and can invest in renewable electricity generation projects that are competitive with other market offerings. These investments by the electric utilities have allowed California to stay ahead of schedule for meeting the RPS requirements.²² Similarly, a Renewable Gas Standard (RGS) and the ability to recover investment costs would drive investment in renewable gas production, processing, and pipeline interconnection. The CEC should include an RGS in its recommendations in the 2017 IEPR.

The CEC should include renewable gas in the 2018 IEPR Update

The Draft 2017 IEPR recommends re-examining the status of renewable gas as part of the IEPR in four years.²³ Given the urgency of California’s GHG reduction goals and the critical role renewable gas plays in achieving them, SoCalGas recommends a shorter timeline. The CEC should include renewable gas as a special issue in the 2018 IEPR Update and further explore the implementation of an RGS. As the 2017 Draft IEPR has identified that multiple stakeholders

²² California Energy Commission, http://www.energy.ca.gov/renewables/tracking_progress/documents/renewable.pdf

²³ 2017 Draft IEPR, p. 295

have already expressed the need for an RGS,²⁴ the CEC should examine and recommend a utility procurement requirement.

SoCalGas looks forward to continuing to work with CEC, other state agencies, and industry stakeholders to support successful implementation of SB 1383 and to ultimately achieve California's 2030 GHG reduction goals.

V. Chapter 10: Climate Adaptation and Resiliency

SoCalGas supports each policy recommendation in Chapter 10, but thus far, climate adaptation and resiliency planning processes have not been focused on Southern California natural gas infrastructure and the benefits it brings to the overall resilience of California. We ask staff to include the following information in the final 2017 IEPR.

A diversified energy portfolio is prudent risk management against climate change

Energy diversification is necessary as a climate adaptation strategy: the UN Framework Convention on Climate Change clearly states that expanding the energy portfolio increases system reliability in a cost-effective manner. Over-reliance on a single energy source can create avoidable and unnecessary risks for public safety and the economy. Maintaining diverse energy sources across the economy is a prudent measure to ensure resiliency. Gas technologies, such as P2G and other distributed generation resources, should be part of California's strategy to adapt to climate change.

The natural gas system is resilient in the face of natural disasters

Since the natural gas system is mostly underground, it is very resilient to extreme weather events. According to CEC staff, "Climate change appears to have little impact on natural gas availability..."²⁵

For example, in 2012, after Superstorm Sandy, the entire natural gas system in the Northeast was essentially intact, allowing residents to support back-up generators, cook, and keep warm. Businesses with natural gas-powered fuel cells were able to operate and compressed natural gas (CNG) buses in New Jersey were used to shuttle residents to safety.²⁶ This year, Hurricane Harvey reduced the nation's refining capacity by 30%: "While other fleets struggled with fuel shortages [CNG] shuttles were able to stay moving during and after the storm thanks to uninterrupted CNG supply."²⁷ Flooding closed 16 hospitals, but those that had combined heat and power systems were able to provide urgently needed medical attention. These are just a

²⁴ 207 Draft IEPR, p. 275

²⁵ *Potential Impacts of Climate Change on California's Energy Infrastructure and Identification of Adaptation Measures*, CEC, Staff Paper, January 2009, CEC-150-2009-001, at 11.

²⁶ *5 Ways Alternative Fuels Aid Response to Hurricanes and Natural Disasters*, Office of Energy Efficiency & Renewable Energy, September 20, 2017, available at https://energy.gov/eere/articles/5-ways-alternative-fuels-aid-response-hurricanes-and-natural-disasters?utm_source=EERE+Weekly+Digest+of+Clean+Energy+News&utm_campaign=f048cbec65-EMAIL_CAMPAIGN_2017_09_25&utm_medium=email&utm_term=0_96dffafa2f-f048cbec65-34678197

²⁷ *Ibid.*

couple real-world examples of the importance of supply diversification, and specifically distributed generation resources, which offer a clean, flexible, and reliable form of energy.

SoCalGas and other natural gas infrastructure stakeholders must be included in climate resiliency planning and development processes

In order for climate plans to be effective, every region of California must be considered and engaged. Specifically, SoCalGas wants to be involved in establishing a California Partnership for Energy Sector Climate Resilience and convening a joint-agency workshop on climate resilience metrics to help track California's action and successes.

VI. Chapter 11: Update on Energy Reliability Issues in Southern California

Aliso Canyon remains a critical part of the energy infrastructure in Southern California

SoCalGas agrees with the assessment stated in the Draft 2017 IEPR that preventing the normal use of Aliso Canyon will lead to higher power system operating costs. Efforts should be taken to minimize those cost impacts to consumers.

As SoCalGas has stated on numerous occasions, the restrictions on the use of Aliso Canyon still pose a risk to energy reliability in Southern California, especially as winter approaches. SoCalGas will likely not have sufficient supplies to meet all customer demand during weather events, unplanned supply interruptions, or unexpected hourly, daily, and seasonal demands.

The need for flexible and strategically located supply sources will only increase as more renewables are brought online. California needs more flexibility on its energy system, not less. Therefore, as the State continues to plan for its clean energy future, it is important for us to recognize the crucial role of natural gas—and renewable gas—in reaching our climate and air quality goals while providing affordable energy to all Californians.

Recent events reinforce the need for Aliso Canyon. Planned and unplanned outages on the natural gas transmission system—such as those on Line 235 and Line 4000—can greatly impact our ability to transport supplies to demand centers. To address unforeseen conditions such as these, prudent planning incorporates contingencies to provide system resiliency and flexibility. This is where storage resources are critical for maintaining reliability. SoCalGas' system was designed with storage facilities as a key component and Aliso Canyon has by far the largest capacity and flexibility of our four storage facilities, and due to its central location is uniquely able to support the natural gas demands of the Los Angeles Basin. The Division of Oil, Gas, & Geothermal Resources (DOGGR) and the CPUC determined in July 2017 that Aliso Canyon was safe, stating the facility “will be held to the most rigorous monitoring, inspection and safety requirements in the nation.”²⁸ In past years, injections into and withdrawals from storage,

²⁸ California Public Utilities Commission and California Department of Conservation Joint Press Release, July 19, 2017.

http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/News_Room/News_and_Updates/ReleaseStateInspectionsConfirmSafetyofAlisoCanyon.pdf

primarily Aliso Canyon, have been sufficient to maintain system reliability, even when difficult and unexpected conditions arose.

The State must now decide, as a matter of policy, whether it is more prudent to risk customer outages, system reliability, and price volatility, or instead to use Aliso Canyon, a facility that state agencies determined to be safe over three months ago.

The future of Aliso Canyon should not be predetermined in the IEPR

SoCalGas respectfully disagrees with the recommendation in the IEPR that the CEC begin planning for the closure of Aliso Canyon within 10 years. As the CEC is aware, the CPUC is already examining the future of Aliso Canyon through the proceeding it opened pursuant to SB 380 (I.17-02-002). In reaching a final determination in that proceeding, SB 380 (Chapter 14, Statutes of 2016) requires that multiple stakeholders and “relevant government entities” must be consulted. The CPUC proceeding is the correct venue to collect and consider input from these stakeholders before any decision is made.

Additionally, both the CPUC and the CEC are directly involved in I.17-02-002 and have indicated their intent to develop various models to better understand the system and allow technical analysis to guide the determination of the need for the facility. At this time, neither agency has completed this analysis nor the related modelling effort. SoCalGas is concerned that the CEC’s formal statements that Aliso should be closed in ten years is not based on fact but rather on policy, and undermines due process afforded to all parties in the CPUC’s open proceeding. SoCalGas suggests that the appropriate regulatory process be permitted to complete before the IEPR unilaterally commits to any plan for closure of Aliso Canyon. It is necessary that policy be guided by sound technical analysis, especially when assessing the energy needs of a region as large and diverse as Southern California, which will occur through the completion of I.17-02-002

Conclusion

SoCalGas strongly believes that a diverse energy portfolio which includes multiple fuels and technologies is needed to meet California’s energy needs and environmental policies in a cost-effective manner.

SoCalGas appreciates the CEC’s consideration of these comments for the 2017 IEPR and looks forward to continuing to work on advancing California’s energy policy goals and objectives.

Sincerely,

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